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VII. — *Traces of Indo-European Accentuation in Latin.*

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WHILE in Greek the Indo-European free accent is preserved, or at least partly preserved, it has been entirely abandoned in Latin. In its place we find a new system, in which the accent depends chiefly on the quantity of the penult and is bounded by the antepenult.

There can be no doubt that this accentuation is in Latin of rather recent origin; and it is at present generally admitted that it was preceded by a period in which every word was accented on the initial syllable. The change of, e.g., **ad-capio* to *ac-cipio*, of **ob-caedo* to *oc-cīdo*, of **magistumos* to *maxumos*, and other well-known facts yield a safe basis for the theory of an earlier initial accentuation.

It is less generally known that the Latin language, in certain phonetic changes, shows the traces of a still older accentuation, that is to say, of the Indo-European accent. The discovery of these traces is due to the late Edward R. Wharton,¹ who observed that the Indo-Europ. vowels *e* and *o*, when "pretonic" (i.e. when the accent rested on the following syllable), have been changed in Latin to *a*. E.g. Lat. *facio*, according to Wharton, represents an earlier form **fecio* (cf. Gr. *ἔθηκα*), and *magnus* has replaced **megnós* (cf. Gr. *μέγα*).

Although this theory was advanced several years ago, a discussion of its features at the present time will not, I trust, be out of place. Wharton's law has thus far, to my knowl-

¹ See Wharton's paper "On the Vocalic Laws of the Latin Language" (*Trans. of the Philological Society*, London, 1888-90), pp. 47 seq., his *Etyma Latina* (London, 1890), especially pp. 119-120, and his paper "Quelques *a* Latins" in the *Mémoires de la Société de Linguistique de Paris*, Vol. 7 (1892), pp. 451-460. I see from a reference in the *Mémoires*, p. 457, that Wharton first published his view in the *Academy*, 24 Jan. 1885.

edge, received scarcely any attention;¹ and while no attempt has been made to contest its validity, on the other hand no one has declared himself in its favor.

Wharton stated his view in the form of a rule affecting Indo-Europ. "pretonic" *e* and *o* generally.² His rule, in my opinion, will have to be modified so as to apply exclusively to pretonic *e* and *o* in open syllables.³ This may be shown by examining a class of words of whose original form and accent there is little, if any, doubt, viz. the Indo-Europ. numerals. It is especially the following numerals that may serve as a test of the law in question:—

Lat. *tres* = Gr. *τρῆς* (Law of Gortyn, IX, 48), *τρεις* (Hom. and Att.); Skr. *tráyas*; Goth. *þreis*; Indo-Europ. **tréyes*.

Lat. *quattuor* = Gr. 1) *τέσσαρες* (Hom.), *τέτταρες* (Att.), *τέτορες* (Dor.); 2) *πίσυρες* (Hom.), *πέσσυρες* (Lesb.), *τέτταρες* (Boeot.); Skr. Nom. masc. *catvār-as*, Acc. masc. *catúr-as*, Nom. Acc. fem. *cátasr-as*, Nom. Acc. ntr. *catvār-i*; Goth. *fid-vōr*; Indo-Europ. Nom. masc. **qetvōr-es*, Acc. masc. **qetúr-ens*, Nom. Acc. fem. **qétesr-es*, Nom. Acc. ntr. **qetvōr-i*.

Lat. *quinque* = Gr. *πέντε*, Skr. *pāñca*, Goth. *fimf*; Indo-Europ. **pénqe*.

Lat. *septem* = Gr. *ἑπτὰ*, Skr. *saptá*,⁴ Goth. *sibun*; Indo-Europ. **septē'm*.

Lat. *octo* = Gr. *ὀκτώ*, Skr. (Ved.) *aṣṭá* and *aṣṭáu*, Goth. *ahtau*; Indo-Europ. **octō(u)*.

¹ The only reference to it that I have met with is in Lindsay's *Latin Language* (Oxford, 1894), p. 159.

² In the *Mémoires, &c.*, Wharton proposes to distinguish in Latin between a pitch-dialect and a stress-dialect. In the former, he thinks, pretonic *e* and *o* pass into *a*, while in the latter they remain unchanged. It is noticeable that in most of the examples belonging to the supposed pitch-dialect the *a* is found in an open syllable. As regards those ascribed by Wharton to the stress-dialect, besides several with *e* and *o* in a closed syllable, there are others in which the *e* and *o* were more probably originally accented and not pretonic.

³ 'Open syllables' may be defined as syllables ending in a vowel. The following syllable may begin either with a single consonant (e.g. *ma-gis*), or with a group not involving lengthening by position (e.g. *a-prum*).—'Closed syllables' are syllables ending in a consonant, e.g. *al-tus*, *mag-nus*, *sep-tem*.

⁴ On the accent of *saptá*, see Bechtel, *Die Hauptprobleme d. indogerm. Lautlehre*, p. 139.

Lat. *novem* = Gr. ἐννέα (a transformation of *ἐννα, i.e. *ἐννεμ, a form parallel to *névem; see Gust. Meyer's *Griech. Gramm.*, § 405), Skr. *náva*, Goth. *niun*; Indo-Europ. *névem.

Lat. *decem* = Gr. δέκα, Skr. *dāṣa*, Goth. *taihun*; Indo-Europ. *dēcem.

All of these numerals have in their Indo-Europ. forms the vowel *e* or *o* in the penult. If Wharton's law held good as a rule for pretonic *e* and *o* in every kind of syllable, we should expect to find *e* and *o* preserved only in those numerals whose penult was originally accented (*trēs*, *quinque*, *novem*, *decem*), but to find the vowel *a* where the accent rested on the final syllable (*quattuor*, *septem*, *octo*). Our expectations are fulfilled except in the case of *septem* and *octo*, in which the original vowels *e* and *o* are preserved in spite of their pretonic character. The reason, in my opinion, is that the vowels *e* and *o* in Indo-Europ. *septē^em and octō(u) were followed by a combination of two mute consonants. If we confine the change of pretonic *e* and *o* to *a* to open syllables, every one of the aforesaid numerals will be seen to conform to the rule.

One indeed among this number seems to contain an *a*, changed from original *e*, in a closed syllable, viz. *quattuor*. This numeral is irregular in another respect. While in general Oscan and Umbrian share with Latin the vowel *a* in place of Indo-Europ. *e* and *o*, there is no trace of the *a* on the part of these two Italic dialects¹ in this numeral. In view of these facts two explanations are possible. First, we may say that the *e* of the Oscan-Umbrian form is regularly developed from the *e* of Indo-Europ. *qetvōr-, and the *a* of Lat. *quattuor* is not a regular phonetic substitute for earlier *e*, but probably due to analogy. This indeed is the current opinion in regard to Lat. *quattuor*. The ordinal *quartus*, we are told, is responsible for the *a* of *quattuor*, in that *quartus* is supposed to have originated from *qtvēr-to-s or *qtv̄r̄-to-s (Joh. Schmidt,

¹ Oscan *petora* 'quattuor' (Fest.); *petiro-pert* (Tab. Bant. l. 15), *petiru-pert* (ibid. l. 14) 'quater.' Umbrian *petur-pursus* (Tab. Ig. VI.^b 11) 'quadrupedibus' and probably the adjective *Petrunio-* in *Petruniaper natine* 'pro Petronia natione' (Tab. Ig. II.^a 21. 35).

K. Z. 25, p. 49; Brugmann, *Grundriss*, II. 2, p. 473). This explanation seems to me objectionable especially for two reasons:

1) The existence of an early form **ctvartos* (Joh. Schmidt, *ibid.*) in Latin, or **qtv^erto-s* (*ktv^ertá-s*, Schmidt, *ibid.*) in Indo-European — with no vowel between the initial guttural and the following *t* — may justly be doubted. The earliest form of the ordinal for 'four' is found in Skr. *turíya* and *túrya*, and in Old Iran. *tūirya-* and *ā-htūirya*. These forms point to an Indo-Europ. ordinal **qtur-yó-* (or perhaps **qturí'-yo-*). The model, however, of the ordinals in *to-*, formed from other cardinals, caused most of the Indo-Europ. languages to replace the old ordinal by a new form¹ in *to-*, which generally appears as **qetv^erto-s* (or *qetv^rto-s*). The vowel *e* of the first syllable is seen in Gr. *τέταρτος*, or *τέτρατος* (Boeot. *πέτρατος*), Slav. *četv^rtŭ* (= Russ. *četvértj*), Lit. *ketvⁱrtas*, O.H.G. *fiordo*. There is only a single word in Greek in which the first syllable of the ordinal for 'four' has been lost, viz. *ταρτήμορον* (*C.I.A.* II. 476), or *ταρτημόριον* (quoted by Athenaeus, Hesychius, and the Et. Magn.) 'a quarter obol.' The same word is, however, found as *τεταρτημόριον* at an earlier date and in its more original meaning, 'the fourth part' (Her. 2, 180). It seems then that the accumulation of three syllables beginning with *τ-* in *τεταρτη-* was avoided by dropping the first.²

2) While in many cases cardinals have influenced the form of ordinals, an analogical influence of an ordinal on a cardinal, as it is assumed by the above theory, would be something quite unusual. It seems preferable to assume that in *quartus* the vowel *a* was substituted for earlier *e* (cf. *τέταρτος*, *četv^rtŭ*, etc.) by the analogical influence of the cardinal *quat-^rtuor*. I should say, then, that **qetv^ertos* became in Latin

¹ The comparatively late origin of this form is clearly seen in Sanskrit, where *caturthás*, although the regular ordinal of 'four' in the later language (and found even in the Yajurveda and Atharvaveda), is not yet known to the language of the Rigveda.

² So also Gust. Meyer, *Griech. Gramm.*³, p. 500. The familiar instances like *τέτραρχον*, i.e. *τετράδραχμον*, or *ἡμέδιμνον*, i.e. *ἡμιμέδιμνον* (Gust. Meyer, *l.c.*, p. 393), may be quoted in favor of this view.

**qet^ertos*, that this form was remodelled after *quattuor* to **quat^ertos*, and finally contracted to *quārtos*.

If the *a* of *quattuor* cannot be ascribed to the influence of the ordinal *quartus*, the following theory may be offered to explain the relation of Lat. *quattuor* to the Oscan and Umbrian forms *petora*, *petur*-, etc. In accordance with Skr. Nom. *catvāras*, Acc. *catūras*, and Gr. τέσσαρες (Dor. τέτορες) and πέντε, two different stems, **qetvór*- and **qetúr*,¹ are to be presupposed in the early inflection of our numeral in the European languages. Since the first syllable in **qetúr*- is open, this form changed, according to Wharton's law, in the Italic languages to *qatúr*. Later on the distinction between these two stems was levelled, but, if I am right, levelled differently in Oscan-Umbrian and in Latin. While in Oscan-Umbrian the *e* of **qetvor*- prevailed, in Latin the *a* of **qatur*- extended to the whole paradigm of our numeral.

In connection with these remarks on the vocalism of some of the Latin numerals a word will be in place regarding the adjective *magnus*. It has generally been held by comparative philologists that *magnus* is connected with Skr. *mah*- and *mahát*-, Armen. *mec*, Gr. μέγας, and Goth. *mikils*, all of which have the same meaning. This etymology is not disproved by the fact that the *a* of *magnus* is long,² since in Latin every short vowel is lengthened before *gn*. If then we adhere to the traditional view and assume that *meg*- in Latin became *mag*-, the change of the vowel will have to be ascribed to a period when the form of the Latin adjective was similar to that of Skr. *mah*- (Gen. Abl. *mahás*, Dat. *mahé*) and *mahát* (Nom. *mahān*, Acc. *mahām*) and Gr. μέγας, or, in other words, to a period when the first syllable in *magnus* was still open.

Let us now turn to a category which furnishes some of the most striking examples of Wharton's law, viz. to the parti-

¹ The latter form occurs also in the adverb Lat. *quater* ("der Auslaut wol an *ter* angelehnt," Joh. Schmidt, *l.c.*) = Skr. *catúr*, Av. *capruš*.

² *māgnus* and *māgna* in Plautus; see Corssen, *Aussprache*², II. p. 265. The spelling *Máγνος* in Greek texts (Plutarch, etc.) is incorrect; see Marx, *Hilfsbüchlein*, s.v. *māgnus*.

ciples of radical verbs which originally followed the conjugation in *-mi*. However scarce the traces which the verbs in *-mi* have left in the Latin conjugation, it cannot be reasonably doubted that Latin originally possessed the three types of such verbs, ending in a vowel, which in Greek are represented by ἴστημι (Aeol.-Dor. ἴσῑᾱμι) : στατός, ἴημι : ἐτός¹ (or τίθημι : θετός), and δίδωμι : δοτός. It is not easy, at the first glance, to recognize the identical inflection in *stā-re*, *serere* (for **si-se-re*),² and *da-re*. Yet the perfect *sē-v-i* and the nouns *sē-men* and *dō-num* serve to prove that the vocalism of the 'strong' forms of the two latter verbs was originally identical with that of ἴημι and δίδωμι. The 'weak' forms, however, i.e. those forms in which Greek has a short vowel, have in Latin one and the same vowel: *statu-s* = στατός, *satus* = ἐτός, *datus* = δοτός. Wharton's law explains the difference between the Greek and Latin weak forms, in that it enables us to explain Lat. *satus* from **setós* and *datus* from **dotós*.

A vowel of similar character is found in such verbs as *facio*, *iacio*, whose *a* stands in the same relation to the *ē* of the strong forms *fēc-ī*, *jēc-ī*, as the *a* of *satus* to the *ē* of *sēmen*. For the change of *e* to *a* in these verbs, Wharton³ holds the ending *-i-* of the verb-stem responsible. Yet he has only two other examples of alleged verbs in *-iō* (with the accent on the *-i-*), viz. *capio* and *sapio*; and both these examples militate rather against than in favor of accented *i*. For the etymology of *sapio* is uncertain⁴; and *capio* is in all probability

¹ This form is in Greek more frequently found in compounds like ἄφ-eros, μέθ-eros.

² On the identity of Gr. ἴημι and Lat. *sero*, see Leo Meyer in *Bezz. Beitr.* I, pp. 309-311.

³ *Trans. Philolog. Soc., l.c.*, p. 47; *Etyma Lat.*, p. 119.

⁴ Wharton, indeed, compared *sapio* with AgS. *sefan*, maintaining that both mean 'to understand.' But the verb *sefan* or *seofian* means 'to sigh, lament,' and is to be distinguished from the noun *sefa* (m.) 'mind, spirit, understanding, heart.' The latter is identical with Old Norse *sefi* (m.) 'mind, affection' and probably related to AgS. *sibb* 1) 'relationship,' 2) 'natural affection, friendliness, peace, peace of mind.' Since AgS. *sibb* is the equivalent of Skr. *sabhā* f. 1) 'meeting,' 2) 'tribe, kinsmen, kinship,' and AgS. and Old Norse *f* may (between vowels) represent Germanic *b*, it is at least possible to explain *f* in the Germanic words in question from Indo-Europ. *bh* (not *p*).

identical with Gothic *hafja* 'I heave,' which points to a pre-Germanic form *cáp-yō* with the accent on the radical syllable. These circumstances, I think, will justify a new attempt to explain the *a* in *facio* (and *iacio*).

An important clue to the explanation of *facio* is to be sought in the fact that its perfect *fēc-ī* is identical (with the exception of the ending) with *ῥ-θηκ-α*.¹ Undoubtedly the Italic languages originally agreed with Greek in that the guttural of *facio* was at first confined to the aorist. If we may assume with Darmsteter, Danielsson, von Planta, and others,² that the Umbrian forms *feitū, fetu, fetu* (= Lat. *facito*, Osc. *faktud*) and *feia* (= Lat. *faciat*) still contain the Indo-Europ. stem *dhē-* without the additional guttural, the traces of this condition are still visible in our sources of the Italic dialects. At any rate it seems natural to suppose that, in accordance on the one hand with Gk. *θερός*, Skr. *hitá-*, and on the other with Latin *satus* (from the root *sē-*), *ratus* (cf. *rē-ri*), etc., the participle of the root *dhē-* was in the Italic dialects originally **fatos*.³ We may go further, perhaps, and say that the stem *fa-* (changed from *fe-* by the following accent) was once found in the inflection of the Latin verb to about the same extent as the stem *θε-* in the Greek inflection of *τιθημι*. If this is granted, it becomes probable that the stem *fac-* owes its origin to the blending of the two stems *fēc-* and *fa-*.

The explanation generally given of the *a* of *satus*, *datus*, *factus*, etc., is that Lat. *a* represents in such cases an Indo-Europ. irrational or murmured vowel (Brugmann's *ə*).⁴ This

¹ See Fick, *Vgl. Wörterb.*³ II. 114; Curtius, *Verbum*, II.² 229; Bugge, *Altit. Stud.*, p. 31; Bartholomae, *K. Z.* 27, p. 355; *Arische Forsch.*, II. p. 64; *Bezz. Beitr.*, 12, 84 note; *Studien z. idg. Sprachgesch.*, II. 194; Bronisch, *D. Osk. i. u. e- Vokale*, p. 189.

² See R. von Planta, *Gramm. d. osk.-umbr. Dialekte*, I. (1892), p. 358 seq., and Buck, *The Oscan-Umbrian Verb-System* (1895), p. 163.

³ There is a slight possibility that this form is preserved in Umbrian *fato* 'factum,' Tab. Ig. VI.^b 11. More probably, however, in *fato* the letter *h* is omitted before *t* (as e.g. in *sate*, *satam-e*, compared with *sahta* 'sancta'), and *fato* is identical with Lat. *factum*.

⁴ Cf., in addition to Brugmann's *Grundriss* (I². § 193-201), especially F. de

vowel is regarded as the 'weak' form of the long vowels \bar{a} , \bar{e} , and \bar{o} , the opinion being that these long vowels are reduced to a , under the same conditions under which the short vowel e is lost.

There is a remarkable difference of opinion among the advocates of this irrational vowel, as to the sounds by which it is represented in the various branches of Indo-European. All indeed agree that in Sanskrit we find regularly in its place the vowels i and \bar{i} . Opinions, however, differ in regard to the European languages, and especially as to Greek. F. de Saussure, who was the first to investigate this subject accurately, arrived at the following opinion (*Mémoire*, p. 180): "La continuation latine est en général: a dans la première syllable des mots, e ou i dans la seconde. . . . En grec les formes comme $\acute{\epsilon}\rho\epsilon\text{-}\tau\mu\acute{o}\nu$, $\acute{\kappa}\acute{\epsilon}\rho\alpha\text{-}\mu\omicron\varsigma$, $\acute{\alpha}\rho\omicron\text{-}\tau\rho\omicron\nu$, $\acute{\alpha}\rho\iota\text{-}\theta\mu\acute{o}\varsigma$ indiquent que la voyelle muette peut prendre quatre couleurs différentes, sans qu'on voie du reste ce qui détermine l'une d'elles plutôt que l'autre. Il devient donc possible d'identifier l' ϵ de $\acute{\epsilon}\tau\acute{o}\varsigma$ avec l' a du lat. *satus*. Dans $\acute{\epsilon}\tau\acute{o}\varsigma$ de η , $\delta\omicron\tau\acute{o}\varsigma$ de $\delta\omega$ et $\sigma\tau\alpha\tau\acute{o}\varsigma$ de $\sigma\tau\bar{a}$ nous admettrions que le souvenir des formes fortes imposa dans chaque cas la direction que devait prendre la voyelle indéterminée. . . . Libre de toute influence la voyelle ^A semble avoir incliné vers l' a ."

At present there are in the main two different views as to the vowel in question.

The first agrees substantially with De Saussure's opinion in maintaining that a is in Greek the legitimate representative of Skr. i (= Lat. \bar{a}), and that ϵ and o , when appearing in this function, have replaced a former a . This view is held, e.g. by Gust. Meyer, *Griech. Gramm.* § 33, Anm. ("Wenn man Ai. *pitá*, Lat. *pater*, Gr. *πατήρ*, Ai. *kravís*, Gr. *κρέας*, Ai. *-ditá* (in *vyādita*), Lat. *datus*, Gr. *étós*, Lat. *satus* vergleicht, scheint es, dass die ursprüngliche Gestalt des Vocals der

Saussure, *Mémoire sur le système primitif des voyelles Indo-Eur.*, pp. 175 seq.; Fick, 'Schwa Indogermanicum' in *Bezz. Beitr.*, 3, 157 seq. (and 5, 166 seq.); *Zur griech. Lautlehre*, I, *ibid.*, 9, pp. 313 seq.; Bechtel, *Hauptprobleme*, Chap. VII. ("Schwächungen des \bar{a} , \bar{e} , \bar{o} "); Wharton, *Mém. Soc. Ling.*, 7, 454; Wackernagel, *Altind. Gramm.*, I, pp. 17 seq.

schwachen Stufe hier im Griech. wie im Lat. *ǣ* gewesen ist, welches erst später durch Angleichung an das *η* der starken Form zu *ε* wurde.”)

Brugmann, *Grundriss*, I². pp. 170 seq. also says: “Dieser Vocal fiel in allen Sprachzweigen ausser im Arischen mit uridg. *a* zusammen. . . . Dass *ɶ* im Griech. lautgesetzlich auch durch *ε*, *ο* vertreten sei, ist nicht zu erweisen. . . . In den Formen wie *θε-* (*ἔθετο*, *θείμεν*, *θετός*), *δο* (*ἔδοτο*, *δοίμεν*, *δοτός*) liegt Umfärbung des *ε* im Anschluss an die Formen mit *η* (*τίθημι*) und *ω* (*δίδωμι*) vor; vgl. Vf. *Gr. Gr.*² S. 28.”

Others hold that in addition to *a* the vowels *ε* and *ο* may represent in Greek the weak grade of *η* and *ω* respectively, and that there is nothing to indicate that *ε* and *ο* in this function were preceded by an earlier *a*. E.g. Fick in *Bezz. Beitr.*, 9 (1885), pp. 313 seq., has attempted to establish the following rule: “ursprünglich auslautende *η* und *ω* schwächen sich zu *ε* und *ο*, nicht ursprünglich auslautende . . . und inlautende *η* und *ω* lauten schwach beide zu *ǣ* ab.” Bechtel, in his *Hauptprobleme*, pp. 247 seq., says: “In den europäischen Sprachen ist *a* die gewöhnliche Form der zu *ā*, *ē*, *ō* gehörenden Kürze. Aber in ursprünglich einsilbigen auf *ē* und *ō* schliessenden Wurzeln treten noch *e* und *o* neben *a*, im Griechischen ist in diesem Falle der Ablaut *ō:ο* sogar der einzig belegbare. . . . Da es gerade die ältesten aller hierher gehörigen Urworte sind, deren Vocal auf schwacher Stufe als *e* und *ο* auftritt, . . . sehe ich mich zu der Vermutung gedrängt, dass *e*, *ο* und *a* zwei verschiedene Schichten der Schwächung repräsentieren, jene die ältere, diese die jüngere.”¹

¹ Wackernagel in his *Altind. Gramm.* I. § 15 remarks: “Oft steht *i* im Ablaut mit *ā*. . . . In diesen Fällen entspricht dem altind. *i* griech. *α ε ο*, z. B. ved. *sthītā-*: gr. *στάρβ-ς*, ved. (*d*)*hītā-*: gr. *θερό-ς*, brähm. *adithās*: gr. *ἔδδθης* . . . Lat. entspricht durchweg *ǣ*. . . . Man pflegt dafür idg. *ɶ* (Schwa) anzusetzen. . . . Richtiger wäre auch hier den griechischen Vocalismus für die Grundsprache anzunehmen: *a* und ein zweites *e*, *ο*.” While Wackernagel here apparently agrees with Fick in ascribing to Indo-European the forms with *a*, *e*, *ο*, as found in Greek, in other passages he approves of the opinion that in these forms Indo-European has the vowel *ɶ*, e.g. § 74: “Solchen *ā* . . . entspricht auf der Tiefstufe regelmässig *i* aus idg. *ɶ* . . . z. B. ved. *sthītā-* gr. *στάρβ-ς*; . . . ved. *dhītā-* gr. *θερό-ς*; . . . brähm. *adithās* gr. *ἔδδθης*.”

It is the following reasons especially that militate against the theory of De Saussure and his followers.

First. If the weak forms of *τίθημι*, *δίδωμι*, and similar verbs had succumbed to the influence of the strong forms, we should expect the vowel of the former to have been replaced by that of the latter, as e.g. in *εἶην*, *εἶημεν* for *εἴην*, *εἴμεν*, or in Skr. *ágām*, *ágātām* compared with *ἔβην*, *ἔβάτην*.¹ But it is hardly probable that, if forms like **τίθαμεν*, **δίδαμεν* had ever existed, these should have been remodelled after *τίθημι*, *δίδωμι* in such wise as to introduce a third vowel *ε* and *ο*. At least neither De Saussure nor Meyer or Brugmann has quoted any other instance in which the difference between sets of forms with two different vowels has been diminished by adding a third vowel, so chosen as to blend the quality of the first with the quantity of the second; which third vowel might then have gradually replaced the second of the two original vowels.

Secondly. There is, it seems to me, much force in the argument advanced by Wharton, *Mémoires*, vol. 7, p. 454: "si les formes primitives étaient *στατός*, **θατός*, **δατός*, *ἴσταμεν*, **τίθαμεν*, **δίδαμεν*, d'où le changement en *θετός*, *δοτός*, *τίθεμεν*, *δίδομεν*? on peut bien admettre que l'analogie de *στατός* pourrait changer *θετός*, *δοτός* en **θατός*, **δατός*; mais on ne pourrait guère admettre la proposition réciproque."

Thirdly. If in the large number of verbal and nominal derivatives from roots like *δω-*, *θη-*, etc., forms in *a* had formerly existed in place of those in *ο* and *ε*, we might expect that at least some forms would have escaped the force of analogy which swept away the forms in *a*. Yet wherever *ε* or *ο* now constitute the weak grade of verbs in *η* and *ω*, these vowels are found invariably in the weak stem, and there is no trace of an *a*, except in wrong etymologies.²

¹ See Joh. Schmidt, "Die urspr. Flexion des Optativs und der auf *ā* ausl. Präsensstämme," *K. Z.* 24, pp. 303-322.

² Among these belongs the derivation of *δάνος*, with the alleged meaning 'gift,' from *δίδωμι*. By comparative grammarians (e.g. Brugmann, *Griech. Gramm.*,² p. 27; *Grundr.*, I.² pp. 170, 173; Joh. Schmidt, *K. Z.* 26, 335; Giles, *Manual of Compar. Philol.*, p. 191) this noun is generally quoted together with *δώρον*. But *δάνος* in this meaning is not, like *δώρον*, a common Greek word, and does not

Under these circumstances we cannot, it seems to me, but acknowledge with Fick, Bechtel, and others, that the ϵ and o of $\theta\epsilon$ -, δo -, and similar verbal stems are the regular phonetically developed vowels of the weak grade.

Yet in arriving at this conclusion we appear to have avoided Scylla only in order to fall into Charybdis. We are now confronted with the problem: why is it that in the weak grade of verbs in $-\mu$ Greek has the three vowels a , ϵ , o , while in Sanskrit we find one vowel, i ?

If we derive the Skr. i of $sthítá$ -, $hitá$ -, and similar forms from Indo-Europ. 'Schwa' and infer from the Sanskrit vocalism that in Indo-European the vowel of $sthítá$ -($\sigma\tau\alpha\tau\acute{o}\varsigma$) was identical with that of $hitá$ -($\theta\epsilon\tau\acute{o}\varsigma$), of course, any attempt to derive the vowels of $\sigma\tau\alpha\tau\acute{o}\varsigma$ -, $\theta\epsilon\tau\acute{o}\varsigma$ -, and $\delta\omicron\tau\acute{o}\varsigma$ from different Indo-Europ. vowels will appear, as it appears to Brugmann 'nicht überzeugend' or 'unbefriedigend.' Yet if the a of Skr. $\acute{a}j\bar{a}mi$ ($\acute{a}\gamma\omega$), $bh\bar{a}r\bar{a}mi$ ($\phi\acute{\epsilon}\rho\omega$), and $p\acute{a}ti$ -($\pi\acute{o}\sigma\iota\varsigma$) represents three different vowels, still distinguished in Greek, why not assume that in the case of $\sigma\tau\alpha\tau\acute{o}\varsigma$ -, $\theta\epsilon\tau\acute{o}\varsigma$ -, $\delta\omicron\tau\acute{o}\varsigma$ Greek has inherited its three different vowels from Indo-European?

The real difficulty lies in the fact that, while in Greek the stem-vowels of $\acute{a}\gamma\omega$, $\phi\acute{\epsilon}\rho\omega$, $\pi\acute{o}\sigma\iota\varsigma$ do not differ from those of $\sigma\tau\alpha\tau\acute{o}\varsigma$ -, $\theta\epsilon\tau\acute{o}\varsigma$ -, $\delta\omicron\tau\acute{o}\varsigma$ -, we find in Sanskrit in the former case a , and in the latter case i . While Greek seems to favor the theory that $\sigma\tau\alpha$ -, $\theta\epsilon$ -, δo - originated from $\sigma\tau\bar{a}$ -, $\theta\eta$ -, $\delta\omega$ - by the reduction of the long to short vowels, Sanskrit seems to con-

occur in earlier Greek literature. It is quoted by ancient grammarians and lexicographers (e.g. in the *Et. Mag.*) from a passage of an Alexandrian poet, Euphorion, a poet of whom Bernhardy (*Gesch. d. Gr. Lit.*,³ II. 2, 733) says that his style is affected and his language full of obscurities. The passage is $\tau\acute{o} \rho\acute{\alpha} \delta\acute{\iota} \delta\acute{\alpha}\nu\omicron\varsigma \acute{\omega}\pi\alpha\sigma\epsilon\nu$ 'ἔκτωρ (cf. Meineke, *Anal. Alex.*, p. 123). If $\delta\acute{\alpha}\nu\omicron\varsigma$ here really means 'gift,' we shall probably have to say that this meaning is secondary as compared with that of 'loan' or 'debt,' which it has otherwise, in accordance with its connection with $\delta\acute{\alpha}\nu\epsilon\iota\omicron\nu$ and $\delta\alpha\nu\acute{\epsilon}\lambda\omega$. As regards the etymology of these words, I agree with Prellwitz (*Etymologisches Wörterb. d. griech. Spr.*, s.v. $\delta\alpha\lambda\omicron\mu\alpha\iota$ and $\delta\acute{\alpha}\nu\omicron\varsigma$), who states that $\delta\acute{\alpha}\nu\omicron\varsigma$, $\delta\acute{\alpha}\nu\epsilon\iota\omicron\nu$, $\delta\alpha\nu\acute{\epsilon}\lambda\omega$ are connected with $\delta\alpha\lambda\omicron\mu\alpha\iota$, $\delta\alpha\lambda\varsigma$, $\delta\alpha\rho\acute{\epsilon}\mu\alpha\iota$, and that these words are derived from a root $\delta\acute{\alpha}$ - (that is, it is to be noted, with the vocalism of $\iota\sigma\tau\eta\mu\iota$, not of $\delta\acute{\iota}\delta\omega\mu\iota$), 'to divide, distribute,' which is related to Ved. $d\bar{a}$ - (3. sg. $d\bar{a}$ - $t\bar{i}$ and $d\bar{d}ya$ - $t\bar{e}$; see Whitney, *Roots, Verb-Forms, and Primary Derivatives*, s.v. 2 $d\bar{a}$) 'to divide, distribute.'

tradict the opinion that the vowels of *στα-*, *θε-*, *δο-* were ordinary short vowels, and to require the theory that *a*, *ε*, *ο* in these instances represent a form of 'Schwa.'

Bechtel has tried to reconcile the claims of Greek and Sanskrit by separating (*Hauptprobleme*, pp. 264 seq.) forms like *θετό-s*, *δοτό-s* from Skr. forms like *hitá-*, *sitá-*, *çitá-*. In the latter he sees the exact reflexes of Lat. *sātus*, *dātus*, while the former represent, in his opinion, an earlier set of weak vowels ("die älteren Schwächungsproducte *e* und *o*, die das Griechische in grösserem Umfange bewahrt hat"). If this theory implies that the participle of the stem *sē* was in Indo-European *sētó-s*, and that, by a secondary influence of the accent, this form became later on in Latin *sātus* and in Sanskrit *sitá-s* (for **satá-s*, the pretonic *a* being changed to *i*), I could entirely agree with it. Bechtel, it seems, almost maintained this view, especially since he asserts (*l.c.*, p. 264) with Danielsson¹ that a long vowel could not have been reduced at once by the accent to 'Schwa,' and since he also maintains (*l.c.*, pp. 248 seq.) that Skr. *i*, when representing the weak grade of earlier long vowels, has taken the place of an earlier *a*. Nevertheless he holds to the opinion that both Skr. *i* (although descended from an earlier *a*) and Latin *ā* represent Indo-Europ. 'Schwa.' He accordingly fails to explain what relation exists between 'die älteren Schwächungsproducte *e* und *o*' of Greek and the alleged 'Schwa' vowels of Latin and Sanskrit. If in Indo-European the participle of the verb *dhē-* was *dhētó-s*, in accord with *θετό-s*, why is it that in Sanskrit and Latin we find, not the exact reflexes of this form, but the reflexes of a 'younger' form with 'Schwa'? And how shall we understand the theory that the origin of 'Schwa' from a short vowel took place in Indo-European (i.e. at a period antedating the separate Indo-Europ. branches), while forms with 'Schwa' are younger than certain Greek forms?

If in the inflection of verbs like *ἵστημι*, *τίθημι*, *δίδωμι*, both the short vowels of *στα-*, *θε-*, *δο-*, and a 'Schwa' vowel are

¹ See Johansson's note in *Bezz. Beitr.*, 15, p. 307.

to be referred to Indo-European, a means of combining the two may possibly be found in the theories advanced by Johannes Schmidt in *K. Z.* 25, 30 seq., 54 seq. Schmidt maintains that 1) a long syllable is subjected to a more radical shortening if accented on the second following syllable than if accented on the immediately following syllable, and 2) oxytone dissyllabic nouns with a short *a*-vowel (i.e. either *a*, *e*, or *o*) in the first syllable drop this vowel when forming the first part of a compound.¹ On the basis of these laws it might be argued that long vowels were reduced in Indo-European, in accordance with their position in the sentence, partly to short vowels, and partly to a 'Schwa' vowel, and that at a later period in Sanskrit the short vowels were—by analogy—eliminated in favor of the 'Schwa' vowel; while in Greek the 'Schwa' forms were gradually abandoned in favor of those containing a short vowel. I doubt, however, whether such a theory would lead to a satisfactory solution of our problem. It would simply mean relegating to Indo-European the difficulties that we encounter in Sanskrit and Greek, while we still provide no answer to the question why in Greek the 'Schwa' vowel should disappear without leaving the slightest trace, e.g. in nouns derived from *τίθημι*, *ἵημι*, *δίδωμι*.

Our result is that none of the theories which see in the *i* of *sthítā*, *hitā*, etc., a 'Schwa' vowel, explain satisfactorily the relation between *sthítā*, *hitā*, etc., and *στατό-ς*, *θετό-ς*, etc. Why then insist upon regarding the Skr. *i* as a form of Indo-Europ. 'Schwa,' and why not explain it as the result of an Indo-Iranian change of 'pretonic' *a* to *i*, parallel to the change of pretonic *e* and *o* to *a* in Latin? This, in fact, is the solution I should like to advocate, adding here—as in the case of Latin—the restriction that the alteration is confined to *open* syllables.

However radical this theory may at first glance appear to those accustomed to the current views, a detailed examina-

¹ I cannot enter here upon a discussion of these two laws, but may refer to Bechtel's remarks in *Hauptprobleme*, pp. 268 seq., who approves of the second law, but rejects the first.

tion of the instances in question would, I have no doubt, show that every apparent exception to our theory would also prove an exception to the current explanation; with the sole difference that the difficulty from our standpoint appears in Sanskrit, while in De Saussure's system it would appear in Indo-European. As I must resist the temptation to enter here on a discussion of the details of this question, I shall confine myself to some additional remarks bearing on the place which this *i* occupies in the system of Sanskrit vocalism.

1) The *i* in question is in several instances also the property of the Iranian languages, e.g. in the Avestan forms *vī-mita*, *fra-mita*, *berezi-mita* = Skr. *mitá-* (partic. pret. pass. of *mā-*), Av. (*zastō*)-*miti* = Skr. *miti-* 'measure, construction,' Av. *sīša-* 'to instruct' = Skr. *ṣiṣá-* (Aor. of *ṣās-*), Av. and Old Pers. *pitar-* = Skr. *pítár*.¹ The transition of pretonic *a* to *i* is to be ascribed to the Indo-Iranian period.

2) Since the *a*, which in Indo-Iranian has replaced the Indo-Europ. 'nasalis sonans' (or, as I should prefer to say with Joh. Schmidt and Bechtel: the combination of a weak vowel with a nasal), remains unaltered (e.g. Skr. *ṣatá-m* = Av. *satem*, Skr. *hatá-* = Av. *jata*, Skr. Gen. sing. of the partic. *sant-*: *satás* = Av. *hatō*), it follows that the transition of pretonic *a* to *i* preceded that of the 'nasalis sonans' to *a*.

3) It is noteworthy that *a* never becomes *i* when it is the vowel of the augment or reduplication. One of the reasons for this exception is apparently this: every accented verbal form (except the so-called nominal parts of the verb, i.e. infinitives and participles) had in Indo-European an unaccented counterpart, and that in principal clauses the verb as a rule was enclitic. This system, as is well known, is preserved in Vedic Sanskrit, and has, as we know from Wackernagel's discovery, left its traces in the accent of the Greek verb. Since there was no occasion for the transition of *a* to *i* in enclitic forms, and because on the whole the

¹ See Bezzenberger, *Nachr. d. Gött. Ges. d. Wiss.*, 1878, p. 275; De Saussure, *Syst. prim.*, p. 150; Bartholomae, *K. Z.* 28, p. 36; Bechtel, *Hauptprobl.*, p. 249. The *i* forms have been replaced more frequently in Iranian by the *ā* forms of the 'strong' stem, e.g. *dāta-* instead of Skr. *hitá-*.

instances in which the *a* of augmented or reduplicated forms is pretonic, are in the minority, we readily understand why *i* instead of *a* was generally excluded from such verbal forms.

4) In not a few instances has the accent in Sanskrit been changed. Thus the word for 'cattle' is both in Vedic and in later Sanskrit generally *paçú-s* (masc.), with an apparently irregular *a* instead of *i*. Yet Gothic *faihu* points, according to Verner's law, to an Indo-Europ. form *pécu*, and a trace of the accent on the first syllable is still found in the Dat. sing. *páçve*, which occurs in the *R. V.* three times (1, 43, 2; 8, 5, 20; 10, 35, 12) and in the neutral form *páçu*, found once (*R. V.* 3, 53, 23).

5) The nominative of the pronoun of the first person may serve as an example of another set of apparently irregular forms. According to Fick, *Vergl. Wörterb.*⁴, I. p. 9, the Indo-Iranian words, Skr. *ahám*, Av. *azem*, Old Pers. *adam*, point to an Indo-Europ. prototype **eshóm*, while the European words, *ἐγώ*, *ego*, Lith. *asz* (Old Lith. *esch*), Old Slav. *azŭ*, Goth. *ik*, presuppose a primitive form **ezō*; whether the former or the latter was Indo-European Fick leaves undecided. I should rather say that the above words represent three different forms: 1) Indo-Iranian **ajhám*, 2) Greek and Latin *egō*, 3) Letto-Slavic and Germanic **eg*. As regards the latter form, the *g* is warranted by Gothic *k*,¹ while the Lithuanian and Slavic gutturals might as well be derived, in accordance with the Indo-Iranian aspirate, from Indo-Europ. **egh*. The *ŭ* of Old Slav. *azŭ* is hardly the equivalent of Indo-Iranian *-am*, but either due to the analogy of *tŭ*, the Nom. masc. of the demonstrative pronoun, or expresses a mute sound, as in *izŭ*, often spelled *iz* = Lith. *isz*, Gr. *ἐξ*, Lat. *ex*. If we compare **eg* or **egh* with Indo-Iranian *ajh-ám*, it is readily seen that the relation between the two

¹ Brugmann (*Grundriss*, II. 2, § 439) and others assume a Primitive Germanic form **eka*, especially because of O.H.G. *ihha*. The meaning of the O.H.G. form, however, is not simply that of O.H.G. *ih*, 'ego,' but rather 'egomet' (Graff, *Ahd. Sprachschatz*, I. 118). The form, in my opinion, is a compound of *ih* and O.H.G. *ia* 'indeed, truly' (= Mod. Ger. *ja*); just as O.H.G. *iahha* 'etiam' (Graff, I. 570) is a compound of *iah* and *ia*.

is the same as that between European *tu* or *tū* (Gr. *σύ*, Lat. *tū*, Lith. *tu*, Old Slav. *ty*, Goth. *thu*) and Skr. *tvám* (or *tuvám*), later *tvám*¹ or between Lat. *id* and Skr. *id-ám*. In other words: in Skr. *ah-ám*, the Indo-Europ. form of the word for 'I' is represented by *ah-*, while the *-ám* is the well-known particle, which is so often added to pronominal forms.² Since this particle appears in the European languages as *-em* (e.g. Lat. *id-em* = Skr. *id-ám*), it is hardly possible to identify it with the *ō* of *ἐγώ* and *egō*. The explanation of this *ō* is generally based on the form *ἐγών*, which in Homer takes the place of *ἐγώ* before a vowel. Traces of the form with *-ν* appear also in some dialectic texts.³ Yet, if *ἐγών* was the more original form, we might expect to find the nasal preserved in Latin, while *ἐστίν* for *ἐστί* and other instances show that final *ν* may in Greek be accessory. We may then regard *egō* as a form, which in Greek and Latin has replaced at an early date the form **eg*. If we bear in mind first, that the ending of *egō* is in Greek and Latin identical with that of *octō*, *duo*, *ambō*; secondly, that in Vedic Sanskrit this *ō* appears as *ā(u)*, for example, in *aṣṭā* and *aṣṭāu*, *dvā* and *dvāu*, *ubhā* and *ubhāu*; thirdly, that the ending *-āu* is found in Sanskrit in the Nom. sing. masc. and fem. *aśāu* 'yonder,' the existence of which in Indo-European is warranted by Av. *hāu*, Old Pers. *hauw*, and Greek *οὐ-* in *οὐτο-s*, we conclude that the ending of *ἐγώ* = Lat. *egō* is probably due to the analogy of the Indo-Europ. nom. **sō(u)* 'yonder.' It will now be easily understood why, in Indo-Iranian, **ajh-ám* did not change its initial *a* to *i*. The fact that in the Avesta in the case of the pronoun of the second person, both the simple *tū* and the compound *tv-əm* are preserved, while Sanskrit has *tvám* only, leads us to the belief that in Indo-Iranian the nominative of the pronouns of the first and second person were used with or without the particle *-ám*. It is even possible that, at the time when the

¹ The Avesta has in this case both forms: 1) *tū*, 2) *tūm* (i.e. *tvəm*, cf. Jackson, *Av. Gramm.*, § 390), in the Gāthā-Av. *tvəm* (= *tuəm* or *tuvəm*).

² Compare on this particle, e.g. Leskien, 'Die Partikel *-am* in der Declination,' *Berichte d. Sächs. Ges. d. Wiss.*, 1884, pp. 94 seq.

³ See Gust. Meyer, *Griech. Gramm.*³, § 409.

transition of pretonic *a* to *i* took place, the forms without additional *-am* were used exclusively.¹

It seemed to me necessary to add the above remarks on the Skr. *i* in order to meet the objection that, on account of this *i*, the *a* of *satus*, *datus*, etc., must be explained from Indo-Europ. 'Schwa'. Both the Skr. *i* and the Lat. *a* may represent a kind of a weak vowel, yet a weak vowel developed in Indo-Iranian and in Italic independently of each other and by a secondary action of the same accent, which at an earlier period had reduced pretonic long vowels to short vowels. This conception of our problem receives additional support from the fact that in Latin the pretonic *a* is not confined to verbs corresponding to the type of Gr. *τίθημι*, *δίδωμι*, but serves as a substitute for pretonic *e* and *o* generally, irrespective of their origin.² Some of the examples belonging to the

¹ An additional remark seems to be required here concerning the accent of *ἐγώ* and *ἐγωγε*. Wackernagel, *Beiträge z. Lehre vom griech. Akzent* (Basel, 1893), p. 20, advanced the theory that *ἐγωγε* has adopted the accent of *ἐμοιγε*, his opinion being that the *ἐ-* of *ἐμοι* and of the supposed earlier genitive **ἐμο* is identical with the first syllable of the Skr. genitive *m-dma*. The latter explanation is, however, extremely doubtful, since *ἐμοι* may simply consist of *μοι* = Skr. *mē* with the *ἐ* of *ἐγώ* = Skr. *ahdm*, while the Gen. *ἐμοῦ* seems to consist of **mē-(syo)* = Skr. *mā-(na)* augmented by the *ἐ* of *ἐγώ*. Wackernagel apparently was misled by the alleged agreement of the accent of *ἐγώ* with that of *ahdm*, an agreement which, if I am right, is entirely accidental, and of no consequence for the accent of *ἐγωγε*. I should prefer, then, to say that *ἐμοιγε* adopted the accent of *ἐγωγε*, provided we may assume with Wackernagel that in either the one or the other form a prehistoric accent has been preserved. A different view is held by F. G. Allinson, *Am. Jour. of Phil.* 12 (1891), p. 50 N., and *Transact. of the Am. Philol. Assoc.* 27 (1896), pp. 73-75, who would explain the apparent retraction of the accent in *ἐγωγε* and *ἐμοιγε* as due to a disinclination to paroxytonesis in trochaic endings. Yet Allinson adds (*Trans.*, p. 75), "Doubtless it would be more satisfactory if we could establish [with Wackernagel *l.c.* and Hirt, *Der indog. Akzent*, Strassb., 1895, p. 33] a survival of a more ancient **ἐγω* and *ἐμοι*, than it is to fall back upon this unexplained tendency to favor a certain cadence." It seems only just that in reply to this admission I should confess that, while I am convinced that *ἐγώ* was preceded by a form **έg* (with accented *e*), and although it seems natural to assume that the latter form first changed to **έgō*, I feel less certain of the direct origin of *ἐγωγε* from the latter form.

² Several instances of Lat. *ā* occurring in the *e/o*-series are quoted by Johanson in *Bezz. Beitr.*, 15, p. 307.

e/o-series, notably *quattuor* and *magnus*, have been dwelt upon above. Some others are the following:

Lat. *aper*, Umbr. (acc. pl.) *apruf*, *abrof*. It is only recently that an exact counterpart of this word has come to light in Greek. On an Aiolic inscription¹ we meet with the form ἔπερος, 'ram.' The origin of Lat. *a* from pretonic *e* is proved by the Germanic equivalents. Old Norse *jǫfurr*, AgS. *eofor*, O.H.G. *ebur* = Mod. Germ. *eber*, which, according to Verner's law, point to a pre-Germanic form **epró-s*.

Lat. *nancisor*, ptc. *nactus*. There can hardly be any doubt that this verb is identical with Gr. ἐνεγκεῖν, Old Slav. *nesq nesti*, Lith. *neszti nèszti*, Goth. *ga-nah*, *bi-nauht-s*, Skr. *naç*, etc. The basis of the Latin verb was probably furnished by an aorist-stem *nec-é-*, agreeing in its accent with Homeric ἐνεκέμεν, Attic ἐνεγκών, ἐνεγκεῖν.

Lat. *pario*, *parentes*. Georg Curtius seems right in connecting these words with the aorist πορεῖν (*Stud.* 5, 440); cf. *Gr. Et.*⁵ p. 282 ("parentes also sind οἱ πορόντες"), and Bechtel, *l.c.*, 446.

The number of examples of an *a* of the latter description might be considerably increased if we included the many words in which the derivation of *a* from former *e* or *o* still remains conjectural because there is no form found in the cognate languages which informs us with certainty as to the position of the accent in Indo-European. Thus, in my opinion, Wharton (*Etyma Latina*, s.v. *vas*) is right in claiming that the *a* of Lat. *vas*, *vadis*, 'surety,' came from pretonic *e*; yet neither ἄεθλος nor Goth. *vadi* furnishes a clue as to the former accent of the Latin word.

On the other hand, it ought not to be overlooked that, in no case in which *e* or *o* was accented, were these sounds replaced in Latin by *a*. Among a very large number of examples corroborative of this statement, I select only a few, viz.:

¹ See Sal. Reinach, *Revue des études grecques*, IV. (1891), pp. 268-275, and cf. R. Meister, *Idg. Anz.* 1, p. 203. The passage in which the word occurs is: ἔπεροι καὶ ἀρνήαδες ἐρίων ἀτέλεες.

for *e*.

edo	= Skr. ádmī, ἔδω
fero	= Skr. bhārāmi, φέρω
sequor	= Skr. sácate, ἑπομαι
nepos	= Skr. nápāt, O.H.G. nefo
pecu	= Ved. páçu (<i>R.V.</i> 3, 53, 23), Goth. faihu
equos	= Skr. áçva-s, ἵππο-s
genus	= Skr. jánas, γένος
et	= Skr. áti, ἔτι
per	= Skr. pári, πέρι

for *o*.

domus	= Skr. dáma-s, δόμο-s
opus	= Skr. ápas
potis	= Skr. páti-s, πόσι-s ¹
rota	= Skr. rátha.

If in the *e/o*-series pretonic *a* is in Latin (as pretonic *i* in Sanskrit) much less frequently found than in *ē/ō*-verbs, this is only what we ought to expect. For it is only in exceptional cases that in Indo-European *e* or *o* occurred in the former in pretonic syllables. The general rules of Indo-European vocalism necessitate in this position the loss of the stem-vowel.

This contribution to comparative phonology is consecrated to the memory of a scholar who, by a premature death, has been called from us. Edward Ross Wharton, the author of the works *Etyma Graeca* and *Etyma Latina*, died on June 4th, 1896.

¹ Goth. *-fap-s* in *brūþ-fap-s*, *hunda-fap-s*, *synagoga-fap-s*, *þusundi-fap-s*, whose stem is *-fadi-* (see the examples in E. Schulze's *Goth. Glossar*, s.v. *faps*), does not contradict the Skr. and Greek accent, if we assume that the word was found in Germanic only in compounds, the first part of which bore the accent.